



## UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/563,086	12/30/2005	Satoshi Tamano	1141/75586	8130
23432	7590	03/17/2008	EXAMINER	
COOPER & DUNHAM, LLP 1185 AVENUE OF THE AMERICAS NEW YORK, NY 10036			BOR, HELENE CATHERINE	
ART UNIT	PAPER NUMBER			
	3768			
MAIL DATE	DELIVERY MODE			
03/17/2008	PAPER			

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/563,086	<b>Applicant(s)</b> TAMANO ET AL.
	<b>Examiner</b> HELENE BOR	<b>Art Unit</b> 3768

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 09 January 2008.  
 2a) This action is FINAL.      2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1,2,4,6-10 and 12 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1,2,4,6-10 and 12 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 13 April 2007 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) Information Disclosure Statement(s) (PTO/SB/08)  
 Paper No(s)/Mail Date \_\_\_\_\_
- 4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date \_\_\_\_\_  
 5) Notice of Informal Patent Application  
 6) Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 102***

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Kondo et al. (US Patent No. 5,060,651).

**Claim 1:** Kondo teaches an ultrasound probe to be inserted into a body cavity of a subject (Col. 11, Line 21-23). Kondo teaches a handle section which couples with the insert section (Figure 13, Element 55). Kondo teaches a plurality of vibrator elements is disposed in an array at the tip of the insert section around the entire 360 degree outer circumference (Figure 15, Element 47). Kondo teaches a connection change over switch [electronic switches and coupled with the transducer elements] (Figure 23, Element 30 & Figure 1, Element 53). Kondo teaches a connection change over switch which successively changes over electrical connection of a predetermined number of vibrator elements among the plurality of vibrator elements to be connected with a predetermined number of ultrasonic wave transmission and reception channels for transmitting and receiving ultrasonic wave signals in an ultrasonic diagnostic apparatus main body (Col. 10, Line 67 – Col. 11, Line 10). Kondo teaches wherein each of the each of the plurality of vibrator elements is assigned a consecutive ID number (Figure 15, Element 1, 2, 3...n). While Kondo does not teach the specific numbering of the scanning process, it is inherent that the method teaches same scanning method without listing the specific numbers (Col. 10, Line 67 – Col. 11, Line 10 & Figure 15 & 16).

Kondo teaches the scanning occurring in groups of transducers and with a predetermined delay time (Col. 5, Line 48-51 & Col. 11, Line 8).

***Claim Rejections - 35 USC § 103***

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
4. Claim 2, 4, 6-10 & 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kondo et al. (US Patent No. 5,060,651) and further in view of O'Donnell et al (US Patent No. 5,291,892).

**Claim 2, 9-10 & 12:** Kondo teaches an ultrasound probe to be inserted into a body cavity of a subject (Col. 11, Line 21-23). Kondo teaches a handle section which couples with the insert section (Figure 13, Element 55). Kondo teaches a plurality of vibrator elements is disposed in an array at the tip of the insert section around the entire 360 degree outer circumference (Figure 15, Element 47). Kondo teaches a connection change over switch [electronic switches and coupled with the transducer elements] (Figure 23, Element 30 & Figure 1, Element 53). Kondo teaches a connection change over switch which successively changes over electrical connection of a predetermined number of vibrator elements among the plurality of vibrator elements to be connected with a predetermined number of ultrasonic wave transmission and reception channels for transmitting and receiving ultrasonic wave signals in an ultrasonic diagnostic apparatus main body (Col. 10, Line 67 – Col. 11, Line 10). Kondo teaches wherein each of the each of the plurality of vibrator elements is assigned a consecutive ID number (Figure 15, Element 1, 2, 3...n). While Kondo does not teach the specific

numbering of the scanning process, it is inherent that the method teaches same scanning method without listing the specific numbers (Col. 10, Line 67 – Col. 11, Line 10 & Figure 15 & 16). Kondo teaches the scanning occurring in groups of transducers and with a predetermined delay time (Col. 5, Line 48-51 & Col. 11, Line 8). Kondo teaches circuits for computing images based on the ultrasound wave transmission (Col. 5, Line 58-67) and the circuit includes an ultrasonic tomogram (Col. 9, Line 34-40). Kondo does not teach using the ultrasound apparatus for blood flow imaging. However, O'Donnell teaches that phased array sector scanning as taught by Kondo is capable of measuring the velocity of moving tissues [blood flow imaging] (Col. 2, Line 29-36 & 54-64). It would have been obvious to manipulate the system of Kondo to measure blood flow as taught by O'Donnell in order to obtain valuable diagnostic information (Col. 2, Line 54-64).

**Claim 4:** Kondo teaches the time delay can be controlled and capable of being set unchanged (Col. 5, Line 48-51).

**Claim 6:** Kondo fails to teach the connection change over switch which covers 90 degrees over the insert section, however, O'Donnell teaches the limitation (Col. 9, Line 66 – Col. 10, Line 3).

**Claim 7:** Kondo fails to teach image selection. However, O'Donnell teaches image selection (Col. 12, Line 21-34). It would have been obvious to of ordinary skill in the art to modify the system of Kondo to include the image selection as taught by O'Donnell in order to achieve the maximum image contrast (Col. 12, Line 31-34).

**Claim 8:** Kondo fails to teach adjusting the ultrasound device depending on the depth of the body cavity for imaging, however, O'Donnell teaches the adjustment (Col. 5, Line 39- Col. 6, Line 8).

***Response to Arguments***

5. Applicant's arguments, see Page 2, filed 01/09/2008, with respect to the rejection(s) of claim(s) 1 under 102(b) and rejection(s) of claim(s) 2, 4, 6-14 under 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Kondo et al. (US Patent No. 5,060,651) and O'Donnell et al (US Patent No. 5,291,892).

***Conclusion***

6. Applicant's amendment filed 7/13/07 necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HELENE BOR whose telephone number is (571)272-2947. The examiner can normally be reached on M-T 8:30am-6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Casler can be reached on 571-272-4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Eric F Winakur/  
Primary Examiner, Art Unit 3768

/H. B./  
Examiner, Art Unit 3768